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| 09/912,011 | 07/24/2001 | Gerald D. Zuraski JR. | 5500-67400 | 4622 |

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| EXAMINER | |
|---|---|
| MEONSKE, TONIA L | |
| ART UNIT | PAPER NUMBER |
| 2183 | |

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/912,011 | ZURASKI ET AL. | |
| | Examiner | Art Unit | |
| | Tonia L Meonske | 2183 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. Claim 3-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. Claim 3 recites the limitation "said branch prediction" in line 1. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

### *Claim Rejections - 35 USC § 101*

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

5. The language of the claims raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1,2,9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Perleberg et al. in *Branch Target Buffer Design and Optimization.*

*8.* The rejections are respectfully maintained and incorporated by reference as set forth in the last office action, mailed on June 3, 2004.

9. Claims 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Perleberg et al. in *Branch Target Buffer Design and Optimization.*

10. Referring to claim 21, Perleberg et al. have taught the method of claim 1 wherein said second level cache and said first level cache do not store duplicate information (page 409, Taken branches are moved to the highest level. Entries at higher performance levels are moved to lower performance levels one at a time as the are replaced.).

11. Referring to claim 22, Perleberg et al. have taught the mechanism of claim 9 wherein said second level cache and said first level cache do not store duplicate information (page 409, Taken branches are moved to the highest level. Entries at higher performance levels are moved to lower performance levels one at a time as they are replaced.).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

*13.* Claims 3,4,11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perleberg et al. in *Branch Target Buffer Design and Optimization* and IBM Technical Disclosure Bulletin, *Partial Address Recording in Branch History Tables.*

14. Claim 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perleberg et al. in *Branch Target Buffer Design and Optimization* and IBM Technical Disclosure Bulletin, *Partial Address Recording in Branch History Tables,*. as applied to claim 4 above, and further in view of Free On-line Dictionary of Computing (FOLDOC - http://wombat.doc.ic.ac.uk/foldoc/index.html).

15. Claims 6,7,8,14,15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perleberg et al. in *Branch Target Buffer Design and Optimization.*

16. Claims 17,18,19, and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Yung (EP 798632 A2) and further in view of Perleberg et al in *Branch Target Buffer Design and Optimization.*

*17.* The rejections are respectfully maintained and incorporated by reference as set forth in the last office action, mailed on June 3, 2004.

*18.* Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yung (EP 798632 A2) and further in view of Perleberg et al in *Branch Target Buffer Design and Optimization*

*19.* Claim 23 does not recite limitations above the claimed invention set forth in claim 21 and is therefore rejected for the same reasons set forth in the rejection of claim 21 above.

***Response to Arguments***

20. Applicant's arguments filed November 12, 2004 have been fully considered but they are not persuasive.

21. On page 9, Applicant argues in essence:

> *"There is no teaching or suggestion in Perleberg of the recited rebuilding of branch prediction information by "generating third branch prediction information indicative of a*

*type of branch instruction; and combining said second branch prediction information with said third branch prediction information" as recited in the claim above."*

However, Perleberg has taught generating third branch prediction information indicative of a type of branch instruction; and combining said second branch prediction information with said third branch prediction information. In Perleberg, a taken branch, which is a type of branch, and branch prediction information are moved to the highest level BTB. The branch prediction information that is to be moved to a higher level is equivalent to the second branch prediction information. The claimed third branch prediction information indicative of a type of branch instruction is equivalent to the information in Perleberg that indicates that the instruction is taken. The fact that the branch instruction is taken causes the branch and second branch prediction information to be moved to the highest level. In order for the branch instruction to be moved to the highest level, then second and third branch prediction information must be combined. If the information was not combined then the system would not know to move the second branch prediction information to a higher level. Therefore this argument is moot.

22. On pages 9 and 10, Applicant argues in essence:

*"IBM teaches a special bit may be used to indicate that target instruction address bits are not fully representative of a target address (IBM, page 3). Accordingly, IBM does not teach the recited information which indicates a "type of said branch instruction""*

However, IBM has taught indicating a type of branch instruction. A PC relative branch instruction is a different type of branch instruction from a non-PC relative branch instruction. In IBM, the bit that indicates whether the target instruction address bits are fully representative of a target address is equivalent to the claimed indicating the type of

the branch instruction. IBM has in fact taught indicating a type of branch instruction. Therefore this argument is moot.

23. On page 10, Applicant argues in essence:

*"Applicant also notes claims 7 and 15 recite a branch marker bit which may be used in rebuilding a branch prediction. For example, as stated in the description "[u]tilizing the received instructions and branch marker bits, decoder 400 may then rebuild the remaining portion of the branch prediction entry for local predictor storage 206. Decoder may utilize the branch marker received via bus 2102 to determine the location of predicted taken branches within a group of instruction received via bus 2104." (page 39). Accordingly, Applicant submits the rejection of claims 7 and 15 is improper."*

However, Applicant is arguing a feature of the invention not specifically stated in the claim language, which is improper. Claimed subject matter, not the specification, is the measure of invention. Limitations in the specification cannot be read into the claims for the purpose of avoiding the prior art. In re Self, 213 USPQ 1,5 (CCPA 1982); In re Priest, 199 USPQ 11,15 (CCPA 1978).

*"It is the claims that measure the invention." SRI Int'l v. Matshshita Elec. Corp., 775 F.2d 1107, 1121, 227 USPQ 577, 585 (Fed. Cir. 1985) (en banc).*

*"The invention disclosed in Hiniker's written description may be outstanding in its field, but the name of the game is the claim." In re Hiniker Co., 47 USPQ2d 1523, 1529 (Fed. Cir. 1998).*

*"[A]s an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." In re Morris, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997).*

*"limitations appearing in the specification will not be read into the claims, and ... interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper'." Intervet Am., v. Kee-Vet Labs., 12 USPQ2d 1474, 1476 (Fed. Cir. 1989)(citation omitted).*

> *"it is entirely proper to use the specification to interpret what the patentee meant by a word or phrase in the claim, ... this is not to be confused with adding an extraneous limitation appearing in the specification, which is improper. By 'extraneous,' we mean a limitation read into a claim from the specification wholly apart from any need to interpret ... particular words or phrases in the claim." In re Paulsen, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) (citation omitted).*

In this case, if applicant would like a specific function of the branch marker bit read into the claims, then Applicant should specifically claim those limitations. Therefore this argument is moot.

***Conclusion***

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

25. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia L Meonske whose telephone number is (571) 272-4170. The examiner can normally be reached on Monday-Friday, 8-4:30.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie P Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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